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https://reachmd.com/programs/cme/technology-in-the-monitoring-of-the-pah-patient/14047/

Released: 04/20/2022
Valid until: 04/20/2023
Time needed to complete: 59m

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Technology in the Monitoring of the PAH Patient

Dr. Channick:
Hello. Welcome to this round table discussion. Today, we're going to be talking about the use of technology in managing our patients with pulmonary hypertension. I guess the good, bad, and the ugly of technology. My name is Rich Channick. I'm professor of Medicine at UCLA Medical Center, Co-Director of the Pulmonary Vascular Disease Program. And delighted to be joined by a few colleagues, Dr. Jean Elwing, who's Professor of Medicine at University of Cincinnati, and Director of the Pulmonary Hypertension Program there. Dr. Oksana Shlobin, who's Associate Professor of Medicine at University of Virginia, and Medical Director of The Pulmonary Hypertension Program at INOVA Fairfax Medical Center, and my partner Dr. Rajan Saggar, at UCLA who also co-directs The Pulmonary Vascular Disease Program and is Professor of Medicine at UCLA. Welcome everybody.

So, I think this is a very timely topic, technology. And I think we've all for better or worse been thrown into modern technology given the COVID pandemic. With telemedicine, and we'll talk a little bit about our use of technology for monitoring our patients. So maybe you will start with you, Jean, and give us your sense of how you're using telemedicine and technology now.

Dr. Elwing:
So telemedicine is something we've all had to learn very quickly, and I think we're getting better at it, but I think we all have a love/hate relationship with it. I think it's offered a lot of very great things for our patients who are hard to reach, right? We can reach them at odd times. We can do early morning visits before work. We can reach them when they don't have transportation, or they're too sick to come in, but we have the challenges of reliability, connections, good visuals. And so, I think that we have had to evolve with it. As I said, we're getting better, but I feel like it's something we need to even improve on further, and to get more people access reliably.

Dr. Channick:
Yeah. No, I think, I agree with that. I'd ask you just from a personal experience, as you started doing these telemedicine or virtual visits, what percent of the time would you say, you have a, able to get a smooth connection, patient has good broadband, they can appropriately log on, you can hear them, they can hear you.

Dr. Elwing:
Yes.

Dr. Channick:
Would do you say it's 50% or-

Dr. Elwing:
Initially, I think it was literally about 10 to 15 percent. That was early in the pandemic. It was very frustrating for everyone, and patients would get very stressed by it. They would be trying to log on an hour before the visit. At mid pandemic, about 50%. Now I'm about 70%. And so about one or two patients I will have to call and talk to on the phone, or I'll have to do a phone, and then their video, which will be choppy. So, it's getting better.

Dr. Channick:
It's getting better.

Dr. Elwing:
But definitely not a hundred percent.

Dr. Channick:
Not, not the same. Yeah. Obviously, we lose something in this setting, and Oksana, maybe you can give us maybe the less rosy view of telemedicine.

Dr. Schlobin:
The bad and the ugly. Yeah. I would say, I have more of the hate than love relationship with telemedicine. I agree a hundred percent with everything that Jean says, that has already mentioned, all of the pros. Unfortunately, there are things you just lose with telemedicine assessments. Well, first of all, let's assume that you have a great connection, and you can hear them, and you can see them, your physical exam is extremely limited. I guess you can say, that someone is not short of breath while talking to you, but you really can't do much else. Even if we tell the patients beforehand, please take your vital signs, many people don't have a blood pressure cuff. They don't have an oxygen monitor. They forgot to, they don't have a scale, or they haven't just taken their vital signs when you need them to do. So here goes part of your risk assessment. And then a lot of people are really just not good at assessing their volume status. You ask them to look at their legs. How many times in clinic they say, "I have no swelling." And then you press, and the risk that paining them are right there. So imagine them sitting far away from you, and you are asking them, "Well, do you have any swelling?" "No, I don't." And then you get their bloodwork. If they go to get their bloodwork and their BMP has doubled, and you're like, "I bet you did have some swelling." So you have to really rely on what they tell you as far as this science of right heart failure that you would be able to ascertain yourself if you saw them. And then you also lose some other things. So six minute walk test. Yes. There are some some maybe ways to do home six minute walk test, but not really anything standardized or really reliable. So you're going to lose the fact that they drop their distance, that they're desaturating, that their heart rate doesn't come down at the end of their walk test. So here goes that part of the assessment.

So I think it is good when you cannot get what you really should be getting, which is in person visit. And the, and I think there are a lot times when you see someone in person, you sort of, you talk to the patient, and you often find out things that they were not planning to talk to you about. And I think some of that really kind of gets missed in whether you're trying to telemedicine.

Dr. Channick:
Initially, we had no option, obviously, this is from the pandemic, and everything was shut down. It was mandatory. Now it's most places not anymore, mandatory to do televisits, but I know, like Raj, I mean, we work in the same clinic. A fair number of your visits are still virtual even though they maybe don't have to be. Why is that, and is it the patient or yourself that prefers it, or you fine for some patients it's perfectly appropriate and avoids the horrendous LA traffic for them, or what?

Dr. Saggar:
Yeah, I would say two things. I think one is that they also get used to, and they like the idea of a video visit or a televisit, because it does save them a lot of time and it's just so much easier for them. And I don't blame them for wanting to do televisits only, but I think a better way perhaps is maybe a hybrid approach in some of these cases. So, as you know, we sort of maybe ask them to come every other visit, and make a personal appearance, or particularly if they need testing, to try to bring them in. If they're sort of, not just for the visit, but to say, listen, we also need to get this testing done. So, it kind of makes it more worth their while, so to say. Again, trying to convince someone who's had four televisits in a row, that now you need to come in. It sometimes can get a little, a little bit difficult.

Dr. Channick:
No. We do that all the time. It's a limit to what you could do-

Dr. Schlobin:
I think that telemedicine, there is a role for it, but I would envision, let's say you start someone in therapy, and they live four hours away. So, you do a telemedicine visit in two weeks, or four weeks. So, they don't need to drive all this time for you to sort of check in. And really that visit is more to address side effects. It's not necessarily to assess whether they're responding to therapy. So if you use it really in a targeted manner, I think it can really add a lot, but really not as a substitution for in person visits.

Dr. Elwing:
And I'm using it for results. So you have a right heart cath-

Dr. Schlobin:
Yeah. Yes. Yeah. Yeah, yeah.

Dr. Elwing:
and I wanted to talk to you but I've already prepped you cause I know you're probably going to need a prostacyclin.

Dr. Schlobin:
Right.

Dr. Elwing:
So I've done all the background work, and I get the cath, and then I talk, and then we get the medication going. So that's how I've been using it. And I think there's something that we assume that they're getting the whole visit when they do a telemedicine visit, but we're forgetting all our support staff that they really need to interact with. And they don't get that when they do telemedicine. They don't get our nurse, our pharmacist, and our respiratory therapist part of it.

Dr. Channick:
Yeah. I think there's creative ways to maybe bring those people into the discussion, but that's a fair point. We're talking sort of, in these other segments about difficult to reach patients. And do you have examples where just such a patient just would not have been able to come to your clinic except virtually or as often, where it's really been critical as a positive?

Dr. Elwing:
Oh yes, definitely. We have patients that really are living in rural areas with limited resources. And some of the states, their stat insurance does not provide any transportation. So there is literally no way they can come other than a virtual visit. And they can say, "I can commit to once a year." But that's what they can do. And in a very stable patient, that might be appropriate. But yes, I think it has allowed us to reach people that otherwise would've missed the opportunity to feel better and do better.

Dr. Channick:
And we have to keep that in mind as well. It balances is all out. I'm going to change gears a little bit. We're talking about technology in this segment, and beyond telemedicine, obviously technology is quite advanced, and in medicine especially, and there's the opportunity to monitor patients at home, and do some of the assessments that maybe we haven't been able to do virtually or remotely. And what is your feeling about that Raj? You're an innovative guy by nature. Where is that going there? What's out there?

Dr. Saggar:
I think there's a lot of stuff out there. I don't know, I think we're sort of still in this phase where we're trying to understand how to best incorporate this stuff into like real life practice, but to Jean's point earlier, I think we're, even just getting basic vital signs, I think this was mentioned by all of you guys in terms of, sometimes you do these visits and you don't even get the basic vitals, but as you know, there's been a big push to get home pulse oximetry for instance. And so, with the COVID pandemic, that's been easier. I think people are more apt to have a home oximetry. And then one of the things we may have them do, short of a actual six minute walk at home, is to just sort of walk around and get a little winded, and let's see if you desaturate, if you actually drop your oximetry. Which to me, is really helpful in terms of how sick they may be, or exactly how bad things can be. If we're looking at a patient for instance, with a little bit of concurrent lung disease, or if they happen to be a little bit more hypoxic than others for various reasons. So that's been helpful.

Dr. Channick:
How about the so-called activity monitoring?

Dr. Schlobin:
Yeah, there is one, actigraphy, I think that's what you're referring to. And I think that that's something that right now is being used in some of the clinical trials to measure the sort of average daily activity, and is maybe incorporated in also in this push by FDA to really prove that medications affect how people feel. So this patient's reported outcomes. So actigraphy is one of them that we've used in one of the clinical trials that we participate in. So I think it's a, they potentially can be good additional tools. Cause I think, one thing that we do get when patients come in, it's more of a snippet in time assessment, versus what happens the rest of the time, so.

Dr. Saggar:
For the folks with the Apple watches, I think we've, people love to track their number of steps per day. So, I've kind of, I kind of use that as a rough guideline, and ask them to try to increase that by some amount, and just sort of use that as a, we're always trying to recondition and rehab these patients. So, we sort of say, hey let's, if you're not going to use the treadmill or actually go for a jog just because of all the restrictions and stuff, maybe you can just sort of try to increase the number of steps you do per day.

Dr. Elwing:
Yeah. And I think that's great. And people even just using their smartphones, because they were very, very hesitant to go to rehab, or rehabs are closed. We have been able to use technology to do virtual rehab for some of our patients, which is-

Dr. Channick:
How do you do that?

Dr. Elwing:
So, we offer virtual cardio with our rehab.

Dr. Schlobin:
We do as well.

Dr. Elwing:
It's amazing.

Dr. Channick:
So, they're, so they're getting the same class but-

Dr. Schlobin:
Right.

Dr. Elwing:
But they're doing it at home.

Dr. Schlobin:
But they're, yeah. So, I mean, obviously, you have to have equipment at home, so there is a prerequisite that you have a treadmill or a NuStep, or then whatever else they use, weights, bands, but yes, our program started offering it as well. So, it's obviously not the monitoring, but it's more of a pulmonary rehab that really is recommended for all of the patients with pulmonary hypertension. So yeah.

Dr. Elwing:
So at least it's something where they feel there is some, somebody helping them, and somebody that they can talk with, and report back to us if they're having problems. So, they've enjoyed it.

Dr. Channick:
Yeah, and you have to believe that some of these patients wouldn't have done rehab by going to a class, even before the pandemic. We've all had patients like that. And so I think, I think it has to be a good thing. And I really like the activity monitoring concept. I think we have to acknowledge it's not validated, and there are different devices, and they're used in different ways, and it hasn't been accepted as a primary endpoint in terms of like there's no pH drug that's been approved based on that, but the concept makes so much sense, right. Like you said, you see the patient in the clinic, it's a snapshot how they're doing that day. And it just makes more sense to follow them in real-time to really see things like activity, and like you said, patient reported outcome. So obviously it's going to continue to advance. I think the message here, the horse is out of the barn. Technology is not going backwards. So we're doing telemedicine. I'm sure we'll continue to do it in some form or another.

We're going to continue to do technology. And I think it's going to change the practice of medicine. In some ways they're obviously going to be hiccups and some negative things about it along the way, but I think ultimately, hopefully it'll be to the benefit of patients, and improve that access to care that we've been talking about. So thank you very much for this great discussion and thank you for your attention.